



Roof Assessment and Proposed Solution



VA Medical Center - Durham - Durham, NC

Thank You for Considering CentiMark

www.CentiMark.com



Prepared On: 06/03/2013

Prepared For:

Customer Information

VA Medical Center - Durham
508 Fulton Street
Durham, NC 27705

Attn: Nathan Dean
Chief Engineer

Email: nathan.dean@va.gov

Location Information

VA Medical Center - Durham
508 Fulton Street
Durham, NC 27705

Attn: Nathan Dean
Chief Engineer

Email: nathan.dean@va.gov

Prepared By:

Project Manager

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Please visit us at www.centimark.com

State license: 13399

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06/03/2013

Nathan Dean
VA Medical Center - Durham
508 Fulton Street
Durham, NC 27705

Dear Nathan Dean,

I would like to take this opportunity to introduce you to **CentiMark**. As a full service contractor, we can help you address all of your roofing concerns.

We at **CentiMark** specialize in reroofing commercial, industrial and public buildings. With over 40 years experience, we are sensitive to the needs of manufacturing, retailing and the service markets. Many hotels, hospitals, chemical plants, paper mills, retail stores, and others are under the **CentiMark** roof assemblies. We understand the need to maintain production, safeguard stock, protect employees and guests and most important, address safety issues associated with reroof projects.

In addition to being the largest national roofing contractor, **CentiMark** can offer the financial stability it takes to stand behind its SINGLE SOURCE warranties. With over fifty local offices, we are ready to serve even your smallest needs. We have the capability, for multiple building owners, to provide each client with a planned program; this includes budgets, scope of work and recommendations for prioritizing over a multi-year plan. One of our financial strengths is being able to arrange payment plans to meet the needs of multiple building owners. As a **CentiMark** customer, you will receive a toll-free hotline number available seven (7) days a week, twenty-four (24) hours a day for your service needs.

CentiMark is a customer-oriented contractor. We offer many roofing systems and products to solve even the most difficult roofing problems. We are also available on a consultation basis as well as offering preventative maintenance programs to prolong the life of your existing roof. Additionally, **CentiMark's** flooring division is ready to provide protective coatings, floor resurfacing and other various repair materials to maintain the inside of your building.

With these advantages, we are pleased to offer VA Medical Center a risk proof system designed to meet the specific requirements for your building.

Sincerely,

Christopher Sellers
Sr. Project Manager

◀◀◀ Drawing ▶▶▶

Section: Bldg 6
Area: Drawing
Caption: Drawing



◀◀◀ Overview Pictures ▶▶▶

Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



Section: Bldg 6
Area: Overview
Caption: Overview



◀◀◀ Defect Pictures ▶▶▶

Section: Bldg 6

Area: Defects

Caption: (All) Pipe Flashing Failure



Description

Accessories-(All) Pipe Flashing Failure

Cause

Flashing is failing due to ultra violet exposure, building movement and expansion and contraction of building components.

Impact

Failing flashings allow moisture into the roof system. Moisture in the roof accelerates the failure of the roof system, insulation and decking.

Solution

Flashing needs to be restored to ensure a watertight condition.

Section: Bldg 6

Area: Defects

Caption: (All) Standing Water

Description

Field of the roof-(All) Standing Water

Cause

Inadequate slope to drain, missing crickets and saddles, and deck deflection are common causes.

Impact

Standing water places an additional weight load on structural members and decking. Many roofing materials are weakened or damaged by prolonged exposure to standing water.

Solution

Install supplemental roof drains or tapered insulation in standing water areas to improve drainage.



Section: Bldg 6

Area: Defects

Caption: (All) Wall Flashing Failure



Description

Accessories-(All) Wall Flashing Failure

Cause

Flashing is failing due to ultra violet exposure, building movement and expansion and contraction of building components.

Impact

Failing flashings allow moisture into the roof system. Moisture in the roof accelerates the failure of the roof system, insulation and decking.

Solution

Flashing needs to be restored to ensure a watertight condition.

Section: Bldg 6

Area: Defects

Caption: (BUR/Mod-Bit) "Ridging" of Cap Sheet

Description

Field of the roof-(BUR/Mod-Bit) "Ridging" of Cap Sheet

Cause

Material shrinkage, building movement, improper installation or poor workmanship.

Impact

This condition can allow moisture entry into the building and roof system, causing damage to the building contents, and deterioration of the insulation, decking and the roof system.


Solution

Keep this area closely monitored. If leaking exists, remove the wrinkled area and repair with compatible materials.



◀◀◀ Roof Condition Summary ▶▶▶

VA Medical Center - Durham
508 Fulton Street
Durham, NC 27705

Section: Bldg 6	Sq. Footage: 6,905	Leaks: Multiple												
	<p style="text-align: center;">Core Analysis</p> <table border="1" data-bbox="763 535 1468 749"> <thead> <tr> <th>Layer</th><th>Material</th><th>Thickness</th></tr> </thead> <tbody> <tr> <td>Concrete Structural</td><td>Deck</td><td>4.0</td></tr> <tr> <td>ISO</td><td>Insulation</td><td>1.5</td></tr> <tr> <td>Modified</td><td>Modified</td><td>0.5</td></tr> </tbody> </table>		Layer	Material	Thickness	Concrete Structural	Deck	4.0	ISO	Insulation	1.5	Modified	Modified	0.5
Layer	Material	Thickness												
Concrete Structural	Deck	4.0												
ISO	Insulation	1.5												
Modified	Modified	0.5												
Core Comments: Core														

Roof Condition Summary: We strive to provide our customers with comprehensive information as to their overall roof condition and life expectancy. The roof is in poor condition. As a short-term measure, repairs are needed. It is also suggested that near future roofing work be budgeted.

Membrane: The field of the roof is starting to show visual symptoms of aging. There are noted irregularities in the roof surface. Repairs to the membrane in the identified areas and the institution of a comprehensive preventive maintenance program should be considered.

- (BUR/Mod-Bit) "Ridging" of Cap Sheet - Will lead to problems such as punctures, tears, internal leaks and premature system failure. (see photo)
- (All) Standing Water - Standing water places a strain on the waterproofing membrane, structural members and decking. (see photo)

Details: There are signs that the details of the roof are in need of attention. Items such as caulking along termination points, filling pitch pans, and minor repairs to flashing need to be done. A comprehensive preventive maintenance program is suggested at this point to insure that the roof continues to perform at acceptable levels.

- (All) Wall Flashing Failure - Allows moisture that results in premature membrane, insulation and decking deterioration. (see photo)
- (All) Pipe Flashing Failure - Allows moisture that results in premature membrane, insulation and decking deterioration. (see photo)

Drainage: The roof currently experiences standing water. Remediating measures such as the use of additional drains, gutters, downspouts, diverters, or crickets is suggested.

Insulation: The insulation in the roof assembly appears to be in fine condition.

Deck: The structural deck could not be examined due to building obstacles such as a suspended ceiling or other obstruction.

◀◀◀ Construction Specification ▶▶▶

VA Medical Center - Durham
508 Fulton Street
Durham, NC 27705

Specifications For CentiMark TPO Fully Adhered System

Sections included: Bldg 6

Project Preparation:

Perform a pre-job meeting to determine jobsite logistics and safety requirements.

Safety Related

Furnish and install proper safety equipment in accordance with Centimark's written safety program.

Furnish and install warning lines to identified areas associated with ground related roofing activities.

Store roofing materials in accordance with good roofing practices. Material placement will be to distribute weight loads throughout the entire roof area.

Surface Preparation:

Core cuts will be performed to identify potential areas of wet insulation.

Remove areas identified as wet down to the structural deck and fill void with rigid insulation to level at a cost of \$3.50 per square foot.

Remove and dispose of existing pitch pan(s) as needed.

Remove the existing perimeter termination bar and dispose of debris.

Remove existing wall flashings to a workable surface and dispose of debris.

Remove and dispose of six (6) existing curbs as indicated by Owner's Representative. In the area of removal furnish and install decking and fill void with rigid insulation board.

Insulation Attachment:

Furnish and install a layer of 1.5" polyisocyanurate insulation, (R-Value = 9). This layer of insulation will be secured to the prepared substrate utilizing a uniform application of Olybond Adhesive.

System Application:

Furnish and install **CentiMark** 60 mil reinforced, TPO roof membrane.

Position the TPO membrane over the prepared substrate and allow the membrane sufficient time to "relax" prior to installation.

Fully adhere the TPO membrane directly to the prepared surface.

The thermoplastic membrane seams will be overlapped a minimum of 5", then hot air welded together. Weld width shall be a minimum of 1.5" in width for automatic machine welding. Weld width shall be 2" in width for hand welding. Upon completion of welding, each seam shall be probed to ensure proper securement.

HVAC, Curbed Penetrations and Other Air Handling Unit Details

Furnish and install at the base of the unit 2 3/8" round seam plates to the field membrane. Adhere a second piece of thermoplastic membrane to the curb with bonding adhesive and install prefabricated universal corners for reinforcement.

Parapet Wall Detail

Furnish and install 2 3/8" round seam plates or 1" wide polymer batten strip to the field sheet at the base of the wall. A second piece of membrane will be adhered to the wall, welded to the field sheet and terminated with an aluminum bar.

Pipes Less Than 6" In Diameter

Furnish and install new prefabricated thermoplastic pipe boot secured at the top with a stainless steel screw type clamp fully adhered to the field sheet.

Stacks Greater Than 6" In Diameter

Furnish and install a 60 mil, non-reinforced thermoplastic flashing, where applicable.

Miscellaneous Projections

Furnish and install thermoplastic flashings to the roof projections. Upon completion of welding, each seam shall be probed to ensure proper securement.

Furnish and install new white 24 gauge TPO coated metal pitch pan(s) and/or ChemCurb(s).

New pitch pan(s) and/or ChemCurb(s) shall be installed utilizing mechanical fasteners and/or adhesives and topped with sealant.

Furnish and install TPO uncured flashing to meet the dimensions of the pitch pan(s).

Sheet Metal Accessories:

Furnish and install aluminum termination bar at the top edge of the flashing membrane on interior/exterior walls.

Standard Operating Procedures:

Employee Professionalism

All work shall be performed in a safe, professional manner in compliance with Centimark policy.

Permits

CentiMark will supply the necessary permits for the project.

Nightly Tie-In's

Depending on new roof system being installed, temporary water cut-offs are to be constructed at the end of each working day to protect the newly installed roof system and building interior.

Clean Up

All work premises will be cleaned daily during the construction process and at the completion of the project.

Job Acceptance and Punch List

Conduct a post job walk through for final sign-off of our job completion form.

Warranty

Upon purchase of the roofing system, you become entitled to receive the benefits of single source responsibility through **CentiMark's** comprehensive written warranty. This warranty protects your roof against defects in materials or workmanship. If your roof leaks at any time during the warranty period, we will provide complete warranty service.

Quote Name	Section Name	Length
Durham VA Bldg 6 TPO 60 FA 1-5ISO 6/3/13	Bldg 6	20

CentiMark Corporation disclaims any and all responsibility for pre-existing conditions including, but not limited to: structural damage or deficiencies, clogged drains, mold growth, excessive standing water, removal of hazardous material or other hidden deficiencies such as; damaged or leaking skylights, HVAC units/conduits, electrical or gas lines. This proposal does not cover, and in no case shall CentiMark be liable for, the removal of, or damage to, HVAC units/conduits, gas lines, water lines, electric lines, or conduits, whether located above, below, or in the roof system, lightning protection systems, landscaping, communication cable, communication devices, or other devices, including recalibration of satellites. It is the building owner's financial obligation to provide corrective measures.

◀◀◀ Construction Pictures ▶▶▶

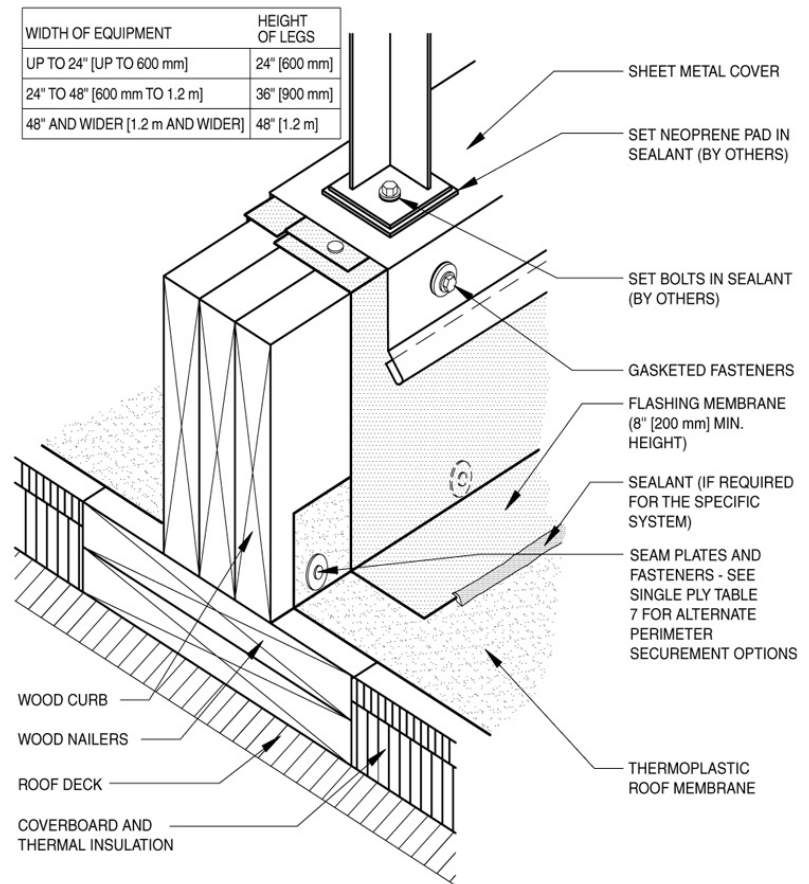


Section: Bldg 6

Area: Construction

Caption: Equipment Support Curb

WIDTH OF EQUIPMENT	HEIGHT OF LEGS
UP TO 24" [UP TO 600 mm]	24" [600 mm]
24" TO 48" [600 mm TO 1.2 m]	36" [900 mm]
48" AND WIDER [1.2 m AND WIDER]	48" [1.2 m]



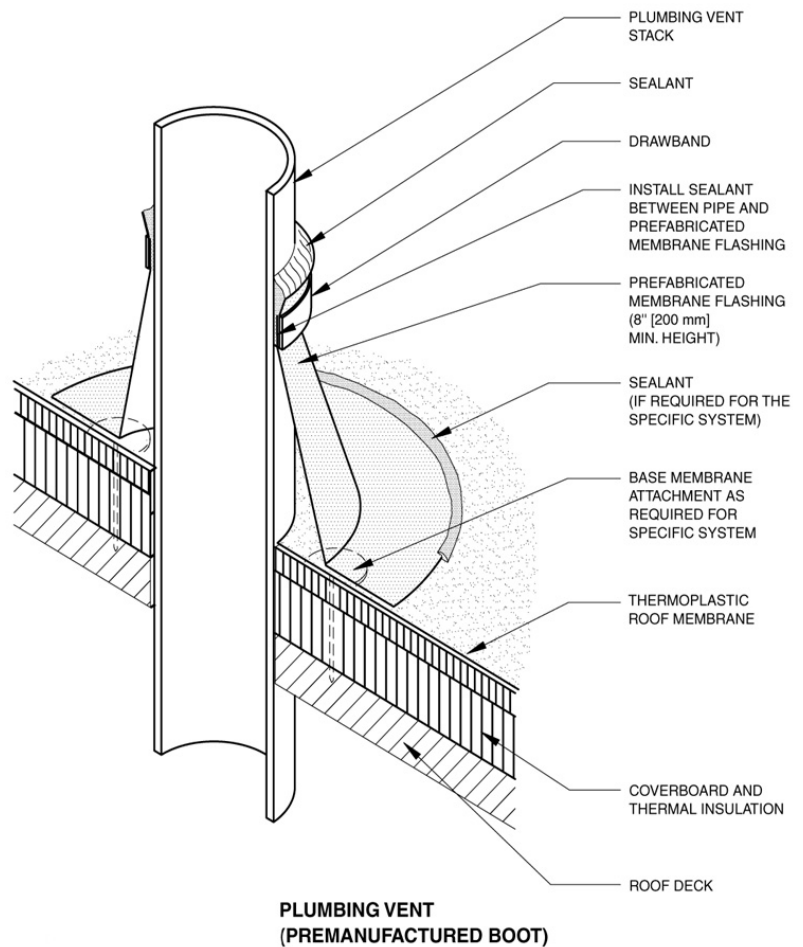
Detail Drawing is a representation of installation method. Actual field assembly may vary.

EQUIPMENT SUPPORT CURB

Construction Pictures



Section: Bldg 6
Area: Construction
Caption: Plumbing Vent (Premanufactured Boot)

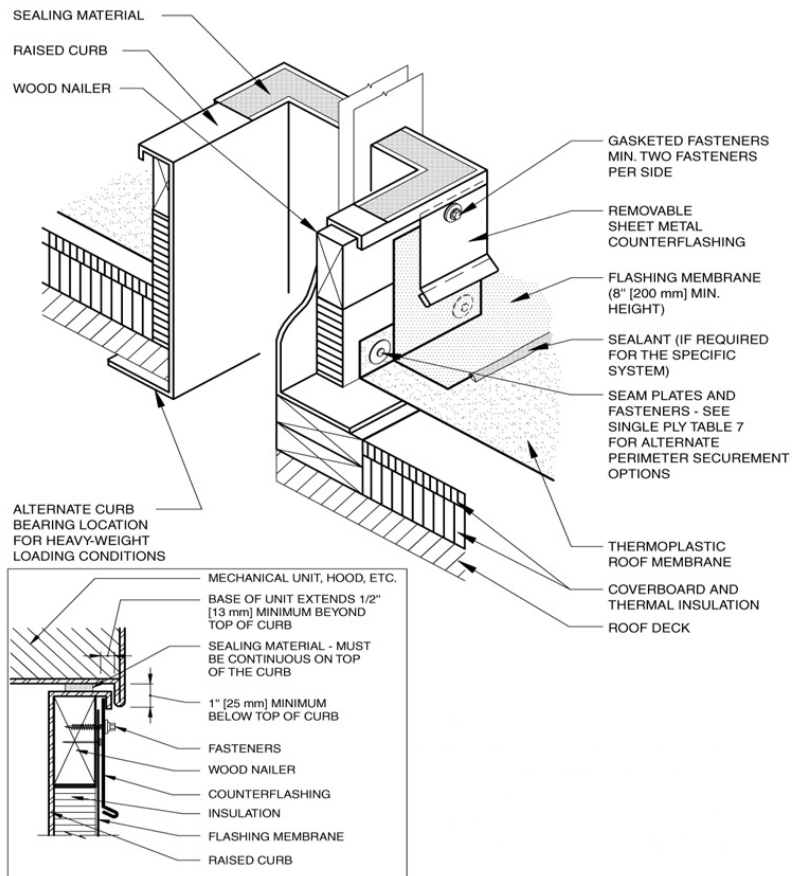


Detail Drawing is a representation of installation method. Actual field assembly may vary.

Construction Pictures



Section: Bldg 6
Area: Construction
Caption: Raised Curb Detail for Rooftop Air Handling Units and Ducts (Prefabricated Metal Curb)



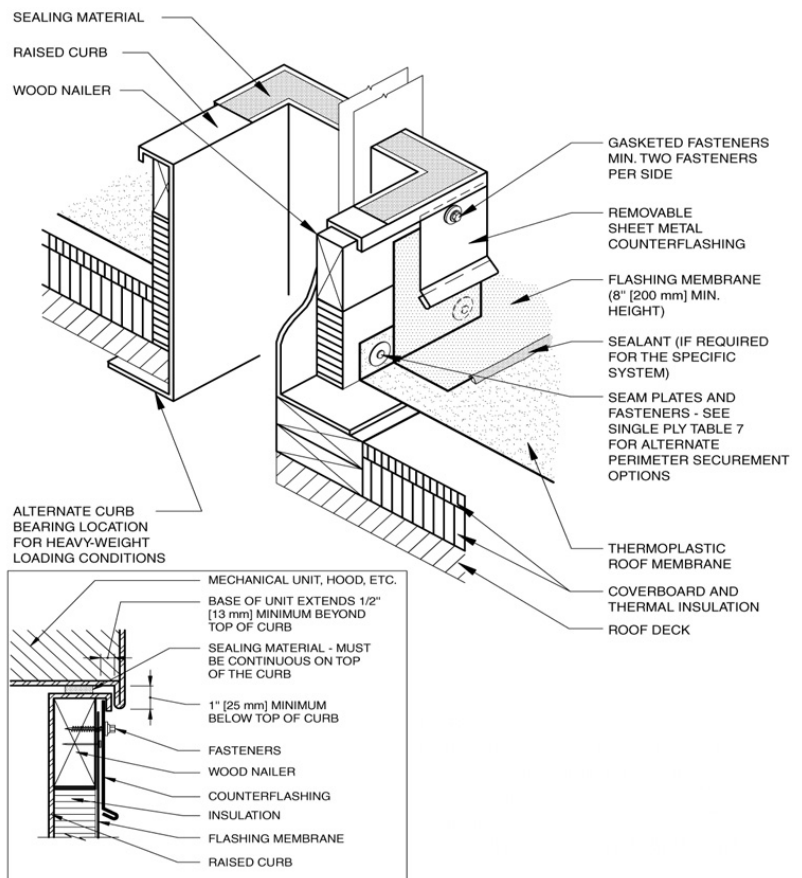
RAISED CURB DETAIL FOR ROOFTOP AIR HANDLING UNITS AND DUCTS (PREFABRICATED METAL CURB)

Detail Drawing is a representation of installation method. Actual field assembly may vary.

Construction Pictures



Section: Bldg 6
Area: Construction
Caption: Raised Curb Detail for Rooftop Air Handling Units and Ducts (Prefabricated Metal Curb)



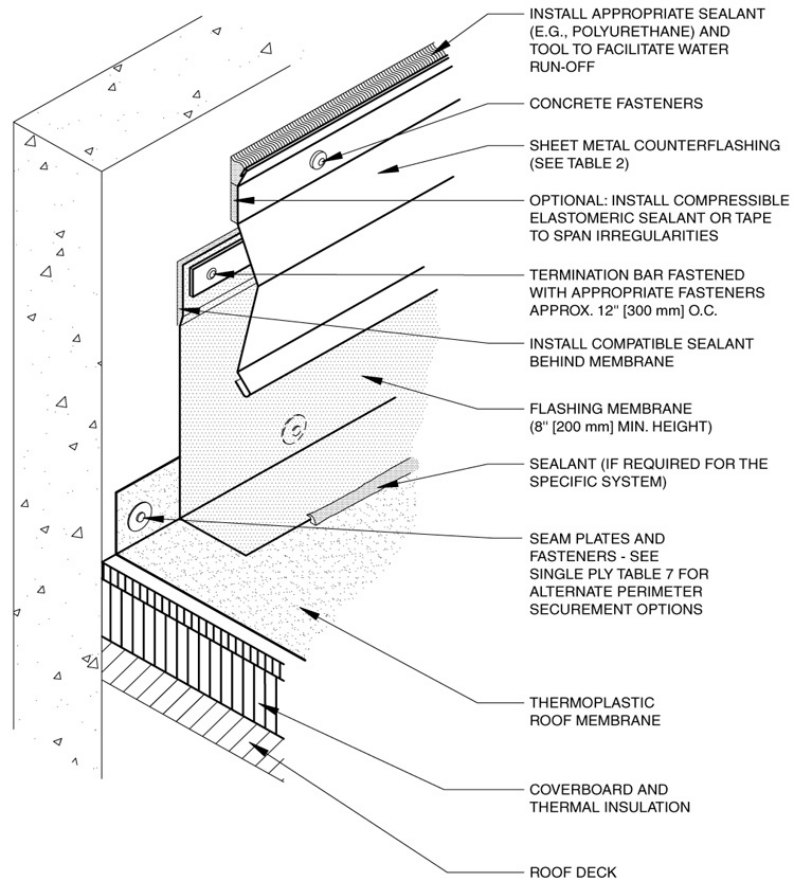
**RAISED CURB DETAIL FOR ROOFTOP AIR
HANDLING UNITS AND DUCTS
(PREFABRICATED METAL CURB)**

Detail Drawing is a
representation of
installation method.
Actual field
assembly may vary.

Construction Pictures



Section: Bldg 6
Area: Construction
Caption: Surface-Mount Counterflashing for Concrete Walls



**SURFACE-MOUNTED COUNTERFLASHING
FOR CONCRETE WALLS**

Detail Drawing is a representation of installation method. Actual field assembly may vary.

◀◀◀ Safety Pictures ▶▶▶

Area: Safety



Existing Safety Condition

Safety Solution

Description

Flags & MSS - Edge MSS

Hazard

Exposed Edges - Fall Hazard

Impact

Centimark employee could fall off the edge resulting in serious injury or death.

Solution

Run a 3/8 inch cable, 7ft back from edge, to prevent employee, wearing a 6ft lanyard, from reaching the fall hazard but still allowing work to be done on the edge.



◀◀◀ Drawing ▶▶▶

Section: Bldg 6
Area: Drawing
Caption: Drawing



◀◀◀ Executive Proposal Summary ▶▶▶

VA Medical Center - Durham
508 Fulton Street
Durham, NC 27705

Quote	Section	Sq Ft.	System	Warranty*	Price
Durham VA Bldg 6 TPO 60 FA 1-5ISO 6/3/13					\$50,165
	Bldg 6	6,905	TPO Adhered	20 years	
Durham VA Bldg 6 TPO 60 FA 3-ISO 6/3/13					\$57,295
	Bldg 6	6,905	TPO Adhered	20 years	
* Roof system warranties protect your roof against defects in materials or workmanship for the specified period as outlined in the CentiMark Non-Prorated Limited Roof Warranty or the manufacturer's warranty.					

CentiMark Project Manager Signature

Date

For internal use only, ID # 154381









Standard terms: One-third (1/3) of the contract price due at the job start and the balance due net thirty (30) upon job completion, unless otherwise agreed to in the contract document. (Special terms are available upon request)

The quotes appearing in this Proposal have been calculated based on current prices for the component building materials. However, the market for building materials is considered to be volatile, and sudden price increases could occur through no fault of CentiMark. Since the quotes are material terms of this Proposal, CentiMark exclusively reserves the right to revoke, without written notice, the quotes at any time prior to a valid purchase order or fully executed contract.

This quote does not include any supplemental deck attachment as may be required by Factory Mutual Global (FM). Please note that should FM and/or you require such deck attachment, additional costs will be estimated and added as a separate item to the overall cost of this project.

Valid from 06/03/2013 to 07/31/2013

References

Contact	Before	After
Type of reference: Industry		
<p>University Towers Raleigh, NC 27607 919-327-3800</p> <p>Contact: Clayton Hayer General Manager</p>		
<p>Murphy-Brown Rose Hill, NC 28458 910-289-6439</p> <p>Contact: Austin Brown Facilities Maintenance Coordinator</p>		
<p>Blended Fellowship Pikeville, NC 27863 919-736-7676</p> <p>Contact: Doug Seymour Pastor</p>		
<p>Hilton Riverside Wilmington, NC 28401 910.763.5900</p> <p>Contact: Doug Withrow Engineer</p>		

<p>Zina Christian Center Raleigh, NC 27604 919-954-8924 Contact: Waymond Burton Manager</p>	 <p>12/12/2009 12:00</p>	 <p>08/07/2009 14:52</p>
<p>Devil Dog Manufacturing Zebulon, NC 27597 919-269-7485 Contact: Johnny Horne Facility Manager</p>	 <p>01/25/2010 18:45</p>	 <p>06/23/2010 16:14</p>
<p>Parkdale Mills Sanford, NC 27330 919-842-2027 Contact: Don Lawrence Manager</p>		 <p>04/09/2009 15:52</p>
<p>Hariss & Covington High Point, NC 27261 336-882-6811 Contact: Darrell Frye Vice President</p>	 <p>02/17/2010 15:55</p>	
<p>Coty, Inc. Sanford, NC 27332 919-895-5000 Contact: Lewis Nordon Engineer</p>		 <p>08/17/2010 10:16</p>

<p>RR Donnelley Wilson, NC 27893 252-299-2455 Contact: Bret Beach 252-299-2455</p>		
<p>Speedline Corporation Greensboro, NC 27401 336-379-8270 Contact: Kim Haynes General Manager</p>		
<p>Unilever Raeford, NC 28376 910-875-1203 Contact: Matthew Kanitz Reliability Engineer</p>		
<p>West Logistics Durham, NC 27703 919-625-2348 Contact: Joel Newkirk Warehouse Manager</p>		
<p>Maola Milk New Bern, NC 28560 252-638-1131 Contact: Leo Holland Facility Engineer</p>		

Southern States Cooperative
Farmville, NC 27828
252-753-4195
Contact: Glen Fisher
Plant Manager



Creative Visions
Suite 100
Raleigh, NC 27617
919-828-1200
Contact: Allin Foulkrod
President



◀◀◀ Frequently Asked Customer Questions ▶▶▶

What should I look for when selecting a roofing contractor?

Any roofing system is only as good as the contractor who installs the roof. The very best components of a roofing system can be specified. Yet if installed by an average contractor, then the results of the project will be average. Roofing projects are dependent upon the contractor. The roof itself is fabricated on your building and those areas such as the roof projections, edge details, penetrations, walls and other areas of the roof requiring workmanship will determine the success of the project. With this in mind it is always important to look for a contractor who has a proven track record with multiple years of experience. It is also important to look to a contractor that has the ability to install multiple roof systems so they can work with you to select the best roof system for your specific needs. Criteria such as a written safety program, a drug tested work force, uniformed employees, and the use of their own employees versus subcontracting, are all important. Financial strength, years in business, and like type references are also worth serious consideration. A final suggestion in selecting a roofing contractor is to ask for references that have had problems. All roofing contractors have had jobs that have leaked. The difference between the good contractors and the bad contractors is how they service the client after the sale. Calling a few clients that have required attention after the initial installation is a good way to measure the contractors commitment to his clientele.

What is the best roofing system on the market?

There is not a single best roofing system available. If there were, everyone would be installing only that particular system. Conversely there are eight major families of roofing including steep slope (inclusive of shingle, tile, shakes, etc), built up roofs (inclusive of asphalt and coal tar), modified bitumen roofs (APP and SBS varieties), metal roofs (standing seam, architectural and pre-engineered), coatings (acrylic, silicone, ceramic, etc), sprayed in place foam roofs, thermoplastic single ply membranes (PVC, TPO, EP, CSPE, etc) and thermalset single ply membranes such as EPDM. Each of these roof systems has its place in the market and its own distinct advantages. A critical factor to a successful roofing project is using a contractor who is both familiar and capable of installing each type of roof system. Such a capability will allow the contractor to evaluate your facility and the particular roofing characteristics of the building and suggest the roofing system(s) that meet the objectives of the owner.

What type of warranty should I buy and how do they differ?

There are multiple warranty types and lengths available. Warranty terms such as No Dollar Limit (a.k.a. NDL) Non Pro-Rated warranty, total system warranty, material warranty, workmanship and material warranty, and single source warranty are all very different and each come with varying degrees of exclusions. Prior to evaluating warranties, a buyer needs to consider who has authored the warranty and keep in mind that the warranty can be written to benefit the warrantor. A buyer should further consider the exclusions that are written into each warranty and determine if these exclusions are acceptable. If the warranty and exclusions do not meet the customer needs then changes or riders to warranty should be requested. The term No Dollar Limit refers to the fact that the warranty coverage is not restricted to the original purchase price and allows for price increases due to inflation and other costs. This warranty is seldom exercised due to the need for catastrophic failure to occur in conjunction with increased roofing prices. The Non Pro-Rated warranty is a warranty that holds its value throughout the life of the warranty term. This type of warranty is not discounted as the roof ages. The warranty holds the same value in the first year of the warranted term as it does the last year. Total system warranties are warranties that cover every aspect of the roof system. This varies from material warranty that may only cover replacement materials and not the labor to install the new material. As a final note, the buyer should determine what it is he or she would like to accomplish with a warranty. This should take into consideration the reasons why the previous roof has failed, how long the building will be owned, what the current use and potential future use of the building may be, and who they want covering potential future needs. Remember, all roofs leak. The question is will it be inside or outside the warranty period. With this in mind, the buyer needs to determine how important it is to have the original installer who is most familiar with the roof to do the repair work.

How much and what type of roofing insulation should I have installed?

The insulation component of a roofing system serves multiple functions. Specifically to include insulating properties or R-value (R-value is the measurement of a materials ability to resist heat transfer), provide an acceptable substrate for waterproofing membrane(s), provide compressive strength and resistance to roof traffic, and provide slope for proper drainage. The type and the amount of insulation used varies with roofing objectives. There are many types of insulation including fiberboard (non-coated, one side coated, six side coated, and high density), perlite, densdeck, expanded polysterene, extruded polysterene, polyisocyanurate, fiberglass, glass foam, and others. Again each insulation type has its advantage.

What are the maintenance obligations once I have the roof installed?

The owners maintenance obligations on the new roof can vary from nothing more than keeping drains and gutters free from debris to extensive preventive maintenance programs. Each roof system and manufacturer has set requirements that are the responsibility of the building owner.